

## 3.12 NOISE

This section addresses noise from potential sources related to the implementation of the Conservation Plan, including noise impacts from construction activities and long-term operational noise from pumps.

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. Several noise measurement scales are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, 30 dB is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities.

There are several methods of characterizing sound. The most common is the A-weighted sound level, or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 3.12-1. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called  $L_{eq}$ . The most common averaging period is hourly, but  $L_{eq}$  can describe any series of noise events of arbitrary duration.

Because the sensitivity to noise increases during the evening and at night—excessive noise interferes with the ability to sleep—24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level (CNEL) is a measure of the cumulative noise exposure in a community, with a 5-dB penalty added to evening (7:00 P.M. to 10:00 P.M.) and a 10-dB addition to nocturnal (10:00 P.M. to 7:00 A.M.) noise levels. The Day/Night Average Sound Level ( $L_{dn}$ ) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this 3-hour period are grouped into the daytime period.

### Noise Regulations

Land use compatibility with differing noise levels is regulated at the local level, although the Federal government has established suggested land use compatibility criteria for different noise zones (Federal Interagency Committee on Urban Noise, 1980). Residential areas and schools are considered compatible where the  $L_{dn}$  is up to 65 dBA; outdoor recreational activities such as fishing, golfing and horseback riding are compatible when noise exceeds 75 dBA; and parks are compatible with noise levels up to 75 dBA.

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**Table 3.12-1. Typical Sound Levels  
Measured in the Environment and Industry**

| <i>At a Given Distance From Noise Source</i>                          | <i>A-Weighted Sound Level in Decibels</i> | <i>Noise Environments</i>                | <i>Subjective Impression</i> |
|---|---|--|------------------------------|
|   | 140                                       |  |                              |
| Civil Defense Siren (100')  | 130                                       |  |                              |
| Jet Takeoff (200')  | 120                                       |  | Pain Threshold               |
|   | 110                                       | Rock Music Concert                       |                              |
| Diesel Pile Driver (100')   | 100                                       |  | Very Loud                    |
|   | 90  | Boiler Room<br>Printing Press Plant      |                              |
| Freight Cars (50')  | 80  |  |                              |
| Pneumatic Drill (50')   |   | In Kitchen with Garbage Disposal Running |                              |
| Freeway (100')  | 70  |  | Moderately Loud              |
| Vacuum Cleaner (10')  | 60  | Data Processing Center                   |                              |
|   | 50  | Department Store                         |                              |
| Light Traffic (100')  | 40  | Private Business Office                  | Quiet                        |
| Large Transformer (200')  | 30  | Quiet Bedroom                            |                              |
| Soft Whisper (5')   | 20  | Recording Studio                         |                              |
|   | 10  |  | Threshold of Hearing         |
|   | 0   |  |                              |
| <i>Source: U.S. Department of Housing and Urban Development. 1985</i> |   |  |                              |

2 Neither Arizona, California, nor Nevada has adopted any quantitative noise regulations that are  
3 applicable to the proposed action, although the CADHS, Environmental Health Division has  
4 established guidelines regarding land use compatibility.

5 Noise regulations established by local jurisdictions that govern stationary noise sources are  
6 typically included in noise ordinances, although policies that limit public exposure to noise may  
7 be included in the general or community plans of individual cities or counties. Some  
8 jurisdictions also have specific provisions addressing construction noise impacts that often limit

the hours and days of construction and may establish noise thresholds that may not be exceeded at specific locations, such as the property line of the site that is under construction. Tables 3.12-2 and 3.12-3 provide summaries of the regulations governing noise from construction and long-term operations, respectively.

**Table 3.12-2. Construction Noise Regulations**

| <i>County/State</i>       | <i>LDN OR CNEL (dB)</i>  |
|---------------------------|--|
| La Paz County, AZ         | None   |
| Mohave County, AZ         | 65 dBA at property line.   |
| Yuma County, AZ           | None   |
| Imperial County, CA       | 75 dBA Leq when averaged over an 8-hour period and measured at the nearest sensitive receptor (e.g., residences, schools, hospitals, parks, office buildings, and certain non-human species, including riparian bird species).   |
| Riverside County, CA      | Riverside County Code does not provide construction noise limits; however, it does restrict construction activities within ¼ mile of an occupied residence(s) to the hours of 6 A.M. to 6 P.M. during the months of June through September, and between 7 A.M. to 6 P.M. during the other months.  |
| San Bernardino County, CA | For large projects, such as subdivision construction adjacent to developed/occupied noise sensitive land uses, a construction related noise mitigation plan is required prior to issuance of a grading permit.   |
| Clark County, NV          | None   |
| <i>City/ State</i>        | <i>LDN OR CNEL (dB)</i>  |
| Parker, AZ                | None   |
| Quartzsite, AZ            | None   |
| Bullhead City, AZ         | None   |
| Lake Havasu City, AZ      | None   |
| City of San Luis, AZ      | None   |
| City of Somerton, AZ      | Construction is not allowed, other than between the hours of 7:00 A.M. and 7:00 P.M. on weekdays, except in case of urgent necessity in the interest of public health and safety and then only with a permit which may be granted for a period not to exceed 30 days, while the emergency continues.                                     |
| Yuma, AZ                  | Construction is not allowed in any residential district or section, other than between the hours of 6:00 A.M. and 7:00 P.M. from the first day of May to and including the 30th day of September and between the hours of 7:00 A.M. and 7:00 P.M. beginning the first day of October to and including the 30th day of April on weekdays. |
| Blythe, CA                | None   |
| Needles, CA               | None   |
| Laughlin, NV              | None   |
| Boulder City, NV          | None   |
| Henderson, NV             | None   |
| Wellton, NV               | None   |

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**Table 3.12-3. Long-Term Noise Compatibility Thresholds**

| County/<br>State  | Noise<br>Ordinance/<br>Controls?<br>Yes/No | LDN OR CNEL (dBA)  |   |                                      |                                      |
|---|--|--|---|--------------------------------------|--------------------------------------|
|   |  | Residential  | Commercial                              | Industrial                           | Recreational                         |
| La Paz County, AZ   | Yes<br>(nuisance ordinance)                | Not specified  | Not specified                           | Not specified                        | Not specified                        |
| Mohave County, AZ   | Yes  | 50-60 dBA  | 50-70 dBA                               | 50-75 dBA                            | 50-75 dBA                            |
| Yuma County, AZ   | No   | NA   | NA                                      | NA                                   | NA                                   |
| Imperial County, CA   | Yes  | Daytime [50-55dB] Nighttime [45-50 dB]   | Daytime [60dB] Nighttime [55 dB]        | Anytime [70-75dB]                    | Not specified                        |
| Riverside County, CA  | Yes  | Daytime [65dB 10-min. Leq] <sup>2</sup> Nighttime [45 dB 10-min. Leq] <sup>2</sup> | 50-65 dBA                               | 50-70 dBA                            | 50-65 dBA                            |
| San Bernardino County, CA   | Yes  | Interior [45 dB] Exterior [60 dB]  | Interior [45-50 dB] Exterior [60-65 dB] | Not specified                        | Interior [NA] Exterior [65 dB]       |
| Clark County, NV  | Yes  | Daytime [56dB] Nighttime [46 dB]   | Daytime [65dB] Nighttime [61 dB]        | Daytime [65dB] Nighttime [61 dB]     | Not specified                        |
| <i>City/ State</i>  |  |  |   |                                      |                                      |
| Parker, AZ  | No   | NA   | NA                                      | NA                                   | NA                                   |
| Quartzsite, AZ  | No   | NA   | NA                                      | NA                                   | NA                                   |
| Bullhead City, AZ   | Yes  | Not specified  | Not specified                           | Not specified                        | Not specified                        |
| Lake Havasu City, AZ  | Yes  | Daytime [50-68 dB] Nighttime [45 dB]   | Daytime [50-68 dB] Nighttime [45 dB]    | Daytime [50-68 dB] Nighttime [45 dB] | Daytime [50-68 dB] Nighttime [45 dB] |
| City of San Luis, AZ  | No   | NA   | NA                                      | NA                                   | NA                                   |
| City of Somerton, AZ  | Yes  | Not specified  | 50 dB                                   | Not specified                        | Not specified                        |
| Yuma, AZ  | Yes  | Not specified  | 70 dB                                   | Not specified                        | Not specified                        |
| Blythe, CA  | Yes  | 50-60 dB   | 50-65 dB                                | 50-75 dB                             | 50-55 dB                             |
| Needles, CA   | Yes  | 45-65 dB   | Not specified                           | Not specified                        | Not specified                        |
| Laughlin, NV  | Yes  | Daytime [56dB] Nighttime [46 dB]   | Daytime [65dB] Nighttime [61 dB]        | Daytime [65dB] Nighttime [61 dB]     | Not specified                        |
| Boulder City, NV  | Yes  | Not specified  | Not specified                           | Not specified                        | Not specified                        |
| Henderson, NV   | Yes  | 32-72 dB <sup>3</sup>  | 32-72 dB <sup>3</sup>                   | 32-72 dB <sup>3</sup>                | 32-72 dB <sup>3</sup>                |
| Wellton, NV   | No   | NA   | NA                                      | NA                                   | NA                                   |
| 1. Daytime is typically 7:00 A.M. to 10:00 P.M. and nighttime is typically 10:00 P.M. to 7:00 A.M.<br>2. Leq (Equivalent Energy Level) – The sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period, typically 18 or 24 hours.<br>3. Henderson generally regulates all uses and activities noise levels by the maximum sound pressure level radiated by any use or facility. These sound pressure levels vary depending on the octave-band range in cycles per second.<br>4. NA |  |  |   |                                      |                                      |

### 2 3.12.1 Affected Environment

3 The following discussion describes the existing manmade noise sources for each reach of the  
 4 LCR, as well as the off-site conservation areas. Noise sensitive receptors are also identified,  
 5 including those in those in urban areas, although the proposed conservation measures likely  
 6 would not be located in proximity to such areas.

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### 3.12.1.1 Lower Colorado River

#### Reach 1

Reach 1 is bordered by Clark County, Nevada and Mohave County, Arizona. The primary noise sources are related to recreational activities such as camping and boating on Lake Mead. Noise generated by the operation of Hoover Dam may also contribute to the noise environment within this reach. The main noise-sensitive receptors in this region are the Lake Mead NRA and Grand Canyon National Park. Here, campgrounds and other recreation areas where quiet is an essential part of the recreational experience are considered noise sensitive uses. The Hualapai Indian Reservation is also located in this reach.

#### Reach 2

Reach 2 is located within Clark County and Mohave County. The primary noise sources are related to recreational activities such as camping and boating on Lake Mohave. Noise generated by the operation of Davis Dam may also contribute to the noise environment within this reach. Because U.S. Highway 93 and Highway 68 cross the LCR perpendicularly, they are a noise source only in the vicinity of the point at which they cross the planning area. The main noise-sensitive receptors in this region are the Lake Mead Recreation Area, which extends from Reach 1, and residential uses in the communities that border this region.

#### Reach 3

Reach 3 is bounded mainly by Mohave County on the east and San Bernardino County on the west, although a small portion of the northern portion of the reach is located in Clark County. The main noise sources in this reach are recreational activities on Lake Havasu and below Davis Dam, vehicular traffic (particularly along Interstate 40), agricultural uses, and aircraft from the Lake Havasu City Airport. Operational noise from Parker Dam also contributes to the noise environment within this reach. The main noise-sensitive receptors in this region are the Lake Havasu and Bill Williams River NWRs and residential uses in the communities that border this region, including the Fort Mojave and Chemehuevi Indian reservations. Bullhead City, Lake Havasu City, and the City of Needles are also located in this reach, and contain noise-sensitive receptors such as schools, hospitals, and residences. Urban areas are also sources of noise.

#### Reach 4

Reach 4 is bordered by La Paz County on the east and is largely located within Riverside County on the west, although the northern portion of the reach is located in San Bernardino County and the southern portion is within Imperial County. The main noise sources within this reach are vehicular traffic (particularly along Interstate 10 and Highway 95), recreational boating, agricultural uses, and operational noise from Headgate Rock Dam and Palo Verde Diversion Dam. The main noise-sensitive receptors in this region are the Cibola NWR and residential uses in the communities that border this region, including the Colorado River Indian Tribes Reservation. The Town of Parker and City of Blythe are also located in this reach, and contain noise-sensitive receptors such as schools, hospitals, and residences. Urban areas are also sources of noise.

*Reach 5*

Reach 5 is bounded by La Paz and Yuma counties on the east and Imperial County on the west. The main noise sources within this reach are related to recreational activities such as camping and boating on Cibola, Adobe, or Martinez lakes. Limited agricultural uses also may contribute to the noise environment. The main noise-sensitive receptors in this reach are the Imperial NWR and the Picacho SRA.

*Reach 6*

Reach 6 is bordered by Yuma County on the east and Imperial County on the west. The main sources of noise within this reach are recreational activities on Mittry Lake. Traffic noise also contributes to the noise environment within this reach, as do agricultural uses and the operation of Imperial Dam. Noise-sensitive receptors in Reach 6 include the Mittry Lake State Wildlife Area, and residential uses in the communities that border this region, including the Fort Yuma Indian Reservation.

*Reach 7*

Reach 7 is located within Yuma County. The main sources of noise within this reach are traffic noise (primarily from Interstate 8), operational noise from Morelos Diversion Dam, and agricultural uses. The main noise-sensitive receptors in Reach 7 include the Cocopah Indian Reservation and associated residential uses. The City of San Luis and Yuma are also located in this reach, and contain noise-sensitive receptors such as schools, hospitals, and residences. Urban areas are also sources of noise.

**3.12.1.2 Muddy River/Moapa Valley and Virgin River**

These rivers are located in Clark County, Nevada, and the Muddy River also passes through the towns of Logandale and Overton. The main sources of noise are related to recreational activities such as camping and boating on upper Lake Mead, as well as agricultural uses in the Muddy River/Moapa Valley. Traffic noise from Interstate 15 contributes to the noise environment where it intersects the Muddy River. Noise-sensitive receptors in the Muddy River/Moapa Valley and Virgin River region include the Lake Mead National Recreation Area, and schools, hospitals, and residences that are associated with the towns of Logandale or Overton. Urban areas are also sources of noise.

**3.12.1.3 Bill Williams River**

The Bill Williams River borders both Mohave and La Paz counties. Agricultural activities are the main source of noise, and the primary noise-sensitive receptor in this region is the Bill Williams River NWR.

**3.12.1.4 Lower Gila River**

The lower Gila River is located in Yuma County. The main sources of noise are traffic (primarily Interstate 8) aircraft associated with the Marine Corps Air Station and Yuma

International Airport, which lie just south of the lower Gila River, and agricultural uses. Noise sensitive receptors include scattered residences and farmhouses.

### 3.12.2 Environmental Consequences

#### *Significance Criteria*

Impacts would be significant if the project would result in the following:

- exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or Noise Ordinance, or applicable standards of other agencies;
- exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

#### 3.12.2.1 *Alternative 1: Proposed Conservation Plan*

##### *Impacts*

The proposed action would require standard construction activities, including clearing, grading, dredging, and construction of infrastructure. Long-term noise would result from the operation of diesel or electric pumps. No elements of the project would result in excessive groundborne vibration or groundborne noise levels.

#### CONSTRUCTION NOISE

**Impact NOI-1: Construction activities could cause a temporary, substantial increase in ambient noise levels that could exceed local standards if construction occurred in proximity to noise-sensitive receptors.** The proposed action would require a number of actions that would generate noise, including clearing, grading, dredging, and construction of infrastructure. The amount of noise generated by each of these key actions at varying distances from the source is shown on Table 3.12-4. The duration of construction would vary, depending on the type of site and the nature of the construction activity. Field facilities, for example, could be constructed in 1 to 3 months, whereas habitat establishment could take considerably longer, depending on the size and other characteristics of the site (e.g., agricultural land can be converted to habitat much more rapidly than undeveloped land). Construction generally would occur in agricultural or undeveloped areas. Thus, noise would be unlikely to affect concentrations of residences, churches, schools, or other sensitive receptors found in more heavily populated areas. Average ambient noise levels likely are low in the areas where construction would occur (about 45 dBA). Nonetheless, construction, particularly on the periphery of the sites, could potentially occur in proximity to individual rural residences. Some of the local jurisdictions in the planning area regulate construction noise, as indicated in Table 3.12-2. If construction activities generated noise levels that violated local standards or caused a substantial increase in areas containing noise-sensitive receptors, this impact would be

1 *significant but mitigable to less than significant* through the implementation of **Mitigation Measure**  
 2 **NOI-1.**

**Table 3.12-4. Maximum Noise Levels (L<sub>dn</sub>) with  
No Noise Reduction Measures in Place**

| <i>Feet</i>                                    | <i>Clearing</i> | <i>Grading</i> | <i>Dredging</i> | <i>Irrigation</i> |
|--|-----------------|----------------|-----------------|-------------------|
| 50   | 85              | 85             | 93              | 93                |
| 100  | 79              | 79             | 87              | 87                |
| 200  | 73              | 73             | 81              | 81                |
| 300  | 69              | 70             | 77              | 77                |
| 400  | 67              | 67             | 75              | 75                |
| 500  | 65              | 65             | 73              | 73                |
| 600  | 64              | 64             | 71              | 71                |
| 700  | 62              | 63             | 70              | 70                |
| 800  | 61              | 61             | 69              | 69                |
| 900  | 60              | 60             | 68              | 68                |
| 1,000  | 59              | 60             | 67              | 67                |
| 1,200  | 58              | 58             | 65              | 65                |
| 1,400  | 56              | 57             | 64              | 64                |
| 1,600  | 55              | 56             | 63              | 63                |
| 1,800  | 54              | 55             | 62              | 62                |
| 2,000  | 54              | 54             | 61              | 61                |
| 2,500  | 52              | 52             | 59              | 59                |
| <i>Note:</i> Background Noise Level (dBA) = 45 |                 |                |                 |                   |

### 3 OPERATIONAL NOISE

4 **Impact NOI-2: Pumps located near noise-sensitive receptors could cause a substantial**  
 5 **increase in ambient noise levels or exceed regulatory thresholds.** The primary source of  
 6 operational noise would be the use of electric or diesel pumps. It is assumed that pumps would  
 7 generate approximately 85 dBA at 50 feet. Noise attenuation would be as shown for clearing  
 8 and grading on Table 3.12-4. As described under construction, the established conservation  
 9 area would be located in agricultural or undeveloped areas, and it is unlikely that pumps  
 10 would be located in the vicinity of noise-sensitive receptors. As noted in section 2.1.1.4,  
 11 conservation areas would be designed to minimize the effect of activities/events that may occur  
 12 on adjacent lands. Thus, pumps generally would be sited to avoid exceeding local regulatory  
 13 noise thresholds or causing a substantial permanent increase in ambient noise levels in the  
 14 project vicinity if noise-sensitive receptors are present. However, if there were no flexibility in  
 15 their placement, impacts could be *significant but mitigable to less than significant* through the  
 16 implementation of **Mitigation Measure NOI-2.**

### 17 *Mitigation Measures*

18 **NOI-1** When construction occurs sufficiently close to noise-sensitive receptors so that noise  
 19 from construction activities exceeds local regulatory standards or causes a substantial



increase in ambient noise levels, one or more of the following measures shall be implemented. This list does not preclude the use of additional mitigation measures if appropriate (*Addresses Impact NOI-1*).

- Use hydraulically or electrically powered impact tools when possible. If the use of pneumatically powered tools is unavoidable, use an exhaust muffler on the compressed air exhaust.
- Install manufacturer's standard noise control devices, such as mufflers, on construction equipment.
- Locate stationary equipment as far as possible from noise-sensitive receptors.
- Notify nearby property users whenever extremely noisy work might occur.
- Use stockpiles as noise barriers when feasible.
- Keep idling of construction equipment to a minimum (no more than 30 minutes) when not in use.
- Install temporary or portable acoustic barriers around stationary construction noise sources.
- As appropriate, modify noise enclosures with acoustical louvers, baffle walls, and/or acoustical panels.
- Whenever possible, limit construction activities to non-mating, non-nesting seasons of noise-sensitive species.

**NOI-2** If pumps cannot be located at sufficient distances from sensitive receptors to avoid the exceedance of a local noise standard or a substantial increase in the ambient noise level at the sensitive receptors, then barriers or enclosures shall be constructed to ensure adherence to local standards. (*Addresses Impact NOI-2*)

#### *Residual Impacts*

Residual impacts would be *less than significant* since noise impacts would be reduced to meet regulatory standards or to avoid substantially increasing the ambient noise levels.

#### **3.12.2.2 Alternative 2: No Action Alternative**

Under the no action alternative, it is likely that conservation measures similar to those included in the proposed action would be implemented since compliance with the ESA still would be required for the covered activities, although some conservation could occur in the off-site conservation areas (as described in section 3.12.2.4 below), as well as along the LCR. **Impacts NOI-1 and NOI-2** apply to this alternative. To the extent that the agencies undertaking the covered activities proceed with ESA compliance through section 7 consultations instead of the section 10 permitting process, there may be a reduced number of covered species because unlisted species would not be included. This would also likely result in a smaller amount of conservation area being established, which would result in proportionately fewer noise impacts. However, due to the increased number of individual projects associated with the no action

alternative, and the greater likelihood that the conservation sites would be located closer to developed areas, noise impacts could be somewhat greater than under the proposed action.

#### *Mitigation Measures*

Mitigation measures would be developed as appropriate in the course of project-specific environmental reviews. If significant impacts are identified, mitigation measures similar to those identified in this EIS/EIR (**Mitigation Measures NOI-1 and NOI-2**) could be implemented. Developing and implementing such mitigation measures is outside the authority of the lead agencies and is beyond the scope of this EIS/EIR.

#### *Residual Impacts*

Residual impacts would be *less than significant* because mitigation measures are available that would reduce or avoid significant noise impacts.

#### **3.12.2.3 Alternative 3: Listed Species Only**

**Impacts NOI-1 and NOI-2** apply to this alternative. The same types of *significant but mitigable to less than significant* impacts would occur as described for the proposed action, but the overall magnitude would be lessened since a smaller amount of conservation area establishment would occur.

#### *Mitigation Measures*

**Mitigation Measures NOI-1 and NOI-2** are applicable to this alternative.

#### *Residual Impacts*

Residual impacts would be *less than significant* because mitigation measures are available that would reduce or avoid significant noise impacts.

#### **3.12.2.4 Alternative 4: Off-Site Conservation**

**Impacts NOI-1 and NOI-2** apply to this alternative. The difference between this alternative and the proposed action is that most conservation measures would be implemented at different locations (along the Muddy/Virgin, Bill Williams, and lower Gila rivers). The conservation measures directly related to fish, including backwater creation, would be implemented in the planning area, as described for the proposed action. Impacts would be *significant but mitigable to less than significant* through the implementation of **Mitigation Measures NOI-1 and NOI-2**.

#### *Mitigation Measures*

**Mitigation Measures NOI-1 and NOI-2** are applicable to this alternative.

#### *Residual Impacts*

Residual impacts would be *less than significant* because mitigation measures are available that would reduce or avoid significant noise impacts.